

RESPONSE TO OFFICE ACTION

Serial No. 09/925,850

Page 5 of 8

REMARKS

This response is intended as a full and complete response to the Office Action dated September 20, 2005. In view of the amendments and the following discussion, the Applicants believe that all claims are in allowable form.

CLAIM REJECTIONS**A. §103(a) Claims 1-14 and 17-22**

Claims 1-14 and 17-20 stand rejected as being unpatentable over United States Patent No. 6,023,395 issued February 8, 2000 to *Dill, et al.*, (hereinafter referred to as "*Dill*") in view of United States Patent No. 6,292,389 issued September 18, 2001 to *Chen, et al.*, (hereinafter referred to as "*Chen*"). The Applicants respectfully disagree.

Independent claims 1 and 9 recite limitations not taught or suggested by the combination of *Dill* and *Chen*. *Dill* teaches a sensor having a biasing ferromagnetic layer 150 and a sensing ferromagnetic layer 132 separated by a conductive nonferromagnetic spacer layer 152. *Chen* teaches a magnetic structure having a first free ferromagnetic layer 28' and a second fixed ferromagnetic layer 26' separated and isolated by a spacer layer 16'. (*Chen* Col. 3, Lines 35-48, Figure 2). The ferromagnetic layer 28' may be replaced by an antiferromagnetically coupled Ru trilayer 31. The Examiner asserts that it would be obvious to one skilled in the art to replace the free layer 132 of *Dill* with the trilayer stack 31 of *Chen*.

The burden for establishing a prima facie case of obviousness falls on the Examiner. See, MPEP § 2142. A basic requirement of establishing a prima facie case of obviousness is that there must be some suggestion from within the references themselves or within the general knowledge available to one of ordinary skill in the art to modify or combine the references teachings. See, MPEP § 2143. The Applicants assert that the Examiner has failed to establish a prima facie case because the desirability to make the asserted modification is not suggested from the references of record, and moreover, the asserted modification would not function in a desirable manner.

412303

RESPONSE TO OFFICE ACTION

Serial No. 09/925,850

Page 6 of 8

The rules applicable for combining references provide that there must be a suggestion from within the references to make the combination. Uniroyal v. Rudkin-Wiley, 5 U.S.P.Q. 2d 1434, 1438 (Fed. Cir. 1988)., In re Fine, 5 U.S.P.Q. 2d at 1599. It is impermissible to use the claims as a framework from which to choose among individual references to recreate the claimed invention. W. L. Gore Associates, Inc. v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (1983). The mere fact that the references could be modified as to have produced the claimed invention is not evidence of obviousness unless the references suggest the desirability of the modification. In re Fritch, 23 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1992), In re Gordon, 221 U.S.P.Q. 2d 1125, 1127 (Fed. Cir. 1984).

The Examiner asserts that the proposed modification would "decrease the stray effects of the magnetization from the free layer on the remaining layers of the head...thereby enhancing magnetic stability of the head." However, *Chen* does not suggest that a synthetic antiferromagnetic layer would provide this, or any other benefit. The Examiner has impermissibly utilized the present application to provide motivation to combine the references. Specifically, motivation may not be derived solely from the applicant's disclosure. In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). Here, the Applicants state on page 5, lines 27-28 that the "resulting self-demagnetizing field enhances the magnetic stability of the recording head structure". Thus, the Examiner has failed to provide proper motivation for combining the references, as the purported motivation has been derived solely from the Applicants' disclosure.

As further evidence of the lack of suggestion or motivation to combine the references, the Applicants submit that the substitution of the free layer 132 of *Dill* with the trilayer 31 of *Chen* would render *Dill* less suited for its intended purpose. The Federal Circuit has held that "if [a] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." In re Gordon, 733 F.2d 903, 221 USPQ 1125 (Fed. Cir. 1984); *see also*, *MPEP* §2143.01. Moreover, a

412303

RESPONSE TO OFFICE ACTION

Serial No. 09/925,850

Page 7 of 8

reasonable expectation of success is required to support the proposed combination. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2142.

Although the use of the trilayer 31 in the apparatus of *Dill* may not render *Dill* inoperable, the separation of the bias layer 150 by the spacer 152 would promote magnetic coupling between the adjacent ferromagnetic layer of the trilayer 31 and the bias layer 150, thereby disrupting the antiferromagnetic coupling of the trilayer 31 and likely degrading the overall performance of the modified *Dill* device. *Chen's* silence about the desirability or benefit of a synthetic antiferromagnetic trilayer, in further view of the undesirable magnetic coupling between the bias layer 150 and trilayer 31 present in the device proposed by the Examiner, the Applicants submit that there is no reasonable expectation of success from such an alteration, or a reasonable expectation of improvement over the unmodified *Dill* structure that would provide motivation to make the proposed modification.

As a reduction in performance would result from the proposed modification, the Applicants submit that one skilled in the art would not be likely to make the modification as asserted by the Examiner. Thus, a *prima facie* case of obviousness has not been established because there is no motivation or suggestion in the prior art to combine the cited references in the manner suggested by the Examiner, and because there is no reasonable expectation of success found in the prior art.

Therefore, *Chen* does not provide a teaching or suggestion to modify the sensing ferromagnetic layer 132 in *Dill* in a manner that would yield a tunneling magnetoresistive stack comprising a free layer having a SAF, a single pinned layer and a bias layer, as recited by claim 1, or a free layer having a synthetic antiferromagnet (SAF) comprising a first ferromagnetic layer of CoFe, a second ferromagnetic layer of CcFe, and a spacer layer between the first and second ferromagnetic, wherein the first and second ferromagnetic layer and anti-parallel magnetic moments, as cited in claim 9. Thus, the Applicants submit that claims 1-14 and 17-22 are patentable over *Dill* in view of *Chen*. Accordingly, the Applicants respectfully request the rejection to these claims be withdrawn.

412303

RESPONSE TO OFFICE ACTION

Serial No. 09/925,850

Page 8 of 8


CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Dec 20, 2005



Keith P. TABOADA
Attorney Reg. No. 45,150
(732) 530-9404

Patterson & Sheridan, LLP
595 Shrewsbury Avenue
Suite 100
Shrewsbury, NJ 07702

412303